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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,147	10/19/2001	Alex Cho	49041-00018USPT	8492
30223	7590	05/19/2004	EXAMINER	
JENKENS & GILCHRIST, P.C. 225 WEST WASHINGTON SUITE 2600 CHICAGO, IL 60606			MORILLO, JANEL COMBS	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

rtt

**Office Action Summary**

Application No.

10/000,147

Applicant(s)

CHO, ALEX

Examiner

Janelle Combs-Morillo

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-16 and 18-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 and 25 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-16,18-21,26 and 27 is/are rejected.
- 7) ☒ Claim(s) 22 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, 5-16, 18-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification does not support (explicitly or implicitly) an alloy “substantially free of scandium”. The examiner acknowledges the examples of the invention do not contain scandium, yet the original specification still does not provide support for a preferred embodiment of an alloy “substantially free of scandium”.

### *Claim Rejections - 35 USC § 102/103*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5-13, 15, 16, 18-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Skinner et al (US 5,226,983 A) in view of “Aluminum and Aluminum Alloys” p 292.

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Skinner teaches a process for heat treating an alloy comprising Al, Cu, Li, Mg, and Zr (see examples 2 and 3, column 6), comprising the steps of solution heating (column 5 line 1), quenching (column 5 lines 5-6, column 6 line 34), and a dual step ageing, such as- ageing at 160°C for 4 hours followed by ageing at 180°C for 16 hours (Example 3, column 6 line 64), or ageing at 170°C for 4 hours followed by ageing at 190°C for 16 hours (Example 2). Skinner teaches that the resulting product exhibits improved strength and ductility (column 3 lines 13-18, see also Ex. 2 and Ex. 3). Scandium is not mentioned in the alloys of Examples 2 and 3. The examiner points out that the difference between 180°C (356°F) and 160°C (320°F) is 36°F, which meets the instant limitation of  $\geq 10^\circ\text{F}$ .

Skinner teaches that the solutionizing treatment is “for a period of time sufficient to substantially dissolve most of the intermetallic particles present during the forging or extrusion process” (column 5 lines 2-4). Because Skinner teaches a process including all of the presently claimed method steps, as well as performing said process on an Al-Cu alloy that meets the instant alloying ranges, it is held that Skinner anticipates the instant invention.

Alternatively, the teaching reference “Aluminum and Aluminum Alloys” states that-

To take advantage of the precipitation hardening reaction, it is necessary first to produce a solid solution. The process by which this is accomplished is called solution heat treating, and its objective is to take into solid solution the maximum practical amounts of the soluble hardening elements in the alloy. The process consists of soaking the alloy at a temperature sufficiently high and for a time long enough to achieve a nearly homogeneous solid solution (“Aluminum and Aluminum Alloys” p292 3<sup>rd</sup> column 1<sup>st</sup> full paragraph).

Therefore, given the disclosure of Skinner (combined with the teaching reference “Aluminum and Aluminum Alloys”) it would have been obvious to solution heat treat in order to obtain a substantially homogeneous solid solution.

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Concerning independent claim 15, Skinner teaches that said heat treatment occurs after hot working (column 4 lines 45-50).

Concerning dependent claims 4-10 and 17-19, Skinner teaches in Example 2 an alloy consisting of: 3.1% Li, 2% Cu, 1% Mg, 0.5% Zr, balance aluminum, which falls within the presently claimed alloying ranges.

Concerning dependent claim 11, Skinner teaches solutionizing at 540°C (1004°F) in Example 2.

Concerning dependent claim 12, Skinner teaches aging at 140°C for 16 hr followed by 160°C for 16 hrs (Table III).

Concerning dependent claims 13 and 20, as stated above, Skinner teaches the 2<sup>nd</sup> aging temperature is 36°F more than the first.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 14, 21, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner et al (US 5,226,983 A) as applied to claims above, optionally in view of "Aluminum and Aluminum Alloys" p 30, 121-123.

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As stated above, Skinner teaches a method of heat treating, including a dual aging, an Al-Cu-Li alloy. Skinner does not specify that a cold working step occurs prior to ageing. However, Skinner does teach a variety of (hot and cold) working operations can take place to form the alloy including direct and indirect extrusion, conventional and impact forging, and impact extrusion (column 4 lines 42-48). Therefore, it is within the disclosure of Skinner to cold work the alloy prior to solution heat treating.

Because Skinner teaches a method comprising the steps of: hot and/or cold working an Al-Cu-Li alloy, solution heat treating, quenching, followed by dual ageing in temperature and time ranges that fall within or are close approximations to the presently claimed time and temperature ranges, it is held that Skinner has created a prima facie case of obviousness of the presently claimed invention.

Alternatively, "Aluminum and Aluminum Alloys" teaches that a T8 temper (solution heat treated, cold worked, and artificially aged, p 30) is commonly applied to Al-Li alloys (p 121) in order to increase the ageing response (see Fig. 3 p 123, etc). It would have been obvious to one of ordinary skill in the art to perform a step of cold working (such as stretching, etc) prior to aging the Al-Li alloy of Skinner because "Aluminum and Aluminum Alloys" teaches said step increases the ageing response of Al-Li type alloys.

Additionally, the examiner submits that the second temperature ageing range taught by Skinner of 356°F is a close approximation of the second temperature ageing range in claims 14, 21, 26, and 27 (340-355°F).

***Allowable Subject Matter***

7. Independent claims 24 and 25 are allowable for the reasons stated in paper no. 9.

8. The following is a statement of reasons for the indication of allowable subject matter:

Concerning claims 22 and 23, the prior art does not teach or suggest a heat treatment process for an alloy comprising Al, Cu, Li, and Ag complete with the presently claimed aging steps.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Amendment/Arguments***

9. In the response filed on February 20, 2004, applicant amended claims 1, 2, 15, 22, 23, 26, and 27, and submitted various arguments traversing the rejections of record.

The examiner disagrees that the original specification supports (explicitly or implicitly) an alloy "substantially free of scandium". The examiner acknowledges the examples of the invention do not contain scandium, yet the original specification still does not provide support for a preferred embodiment of an alloy "substantially free of scandium".

The rejections in view of Miyasato have been overcome by the instant amendment to the claims.

Applicant's argument that the present invention is allowable over the prior art of record because the instant invention is drawn to a heat treatment of an "article" while Skinner is drawn to the heat treatment of an "alloy" has not been found persuasive. It is held that the alloy taught

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by Skinner is within the scope of the term "article". It is not clear what (inherent?) steps have taken place to produce the presently claimed article.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER



JCM  
May 14, 2004